113, 185, 243, 311 Siberia RR1

[For a discussion of the Soviet agricultural program announced in the spring of 1954 to add some 70 million acres to the area of grain cultivation in western Siberia and northern Kazakhstan, see 75: Jackson, R1 Soviet Union, entire source.]

131 The pivot of this circle in its movement from north to south, from the mouth of the Amur to Tientsin, lies in Transbaykal, from which radiate the main traffic lines in these directions. The radius of this circle has currently been shortened by the airline from 2, 250 kilometers to around 1, 600 kilometers.

If Transbaykal thus represents the point of departure for the power position of the Soviet Union, this region's large share in the total area of the Far East constitutes a foundation; for through this region the Soviet Union has also become an East Asian land power, which is undoubtedly very conscious of its position as such. The fact that Manchuria is surrounded /by Russia/ on the northwest, north, and east and the fact that the railroad lines to Vladivostok and Dalny' /Dairen/ run through Manchuria brought this Chinese region under the economic influence of the Russians even in Czarist times. When as a result of the outcome of World War II the Russians won back the positions in Manchuria which they lost from 1903 to 1940, the Russians were again in possession of or had the use of the main railroad lines in Manchuria and the harbors in /14/ southern Manchuria. This means for the Soviet Union again an extension of her economic sphere of influence, which at least equals that of the Czarist empire at the time of its greatest power, and even far exceeds this if consideration is taken of the political events and proceedings of the last few years in East Asia.

185 341 In this the strength of the Soviet Russian position in East Asia depends essentially on the development of her own Far Eastern regions. The present state of colonization and the economy both in Transbaykal and in the real Far Eastern regions shows that these are only at the beginning of their development. Up to now only a small percentage of the land suitable for agriculture has been brought under cultivation, and the exploitation of the natural resources has begun only in small areas. However, the progress which has been made in these spheres even during the Soviet regime reveals that this regime is determined to continue to give the necessary stress and upsurge to the favorable beginnings. The preferred, planned colonization shows this; and the tendency apparent in recent years to lead stronger forces into the industrial sector also indicates that the Soviet Union has the intention of creating in these regions a balanced economy in which all natural resources are given equal recognition. The planned economy of the Soviet Union, which intends to give as self-sufficient as possible a position to all the large economic areas, is especially

clearly manifest here; indeed, the distance and the remoteness of this region from the economic centers of the total union even force them to pursue this policy. In this, a role is not only played by the basic thought of populating these remote but well-situated regions, but also of making them as self-sufficient and strong economically as possible. The opportunities which are given the Soviet Union here cannot be estimated. They are great; only time is required to exploit them.

In connection with the above statement the unique position which the Far Eastern transportation network occupies within the Soviet Union as a whole, deserves to be brought out. A look at the map shows that the entire, complicated railroad network in the western part of the Soviet Union comes together into a single railroad line as it heads toward the Far East. This crosses the Yenisey at Krasnoyarsk and runs as far as Ulan-Ude in Transbaykal. Only here does it begin to split up and to develop into a transportation network, insofar as one can speak of such a thing in the Far East. On this single railroad line, which does, however, have two tracks, depends the entire connection of Transbaykal and the Far Eastern region with the rest of the Soviet Union. Even the completion of the Baykal-Amur line does not eliminate the bottleneck at Krasnoyarsk, and accordingly /15/, a certain self-sufficiency is the result of the development of the railroad network in the Far East.

Transbaykal and the Far Eastern region represent the extreme border position of the Soviet Union in East Asia. As remote border regions, they are really the Far East for the European part of Russia. One sees the sun rise and set eight times before one, coming from Leningrad in the Siberian Express, reaches Chita, the capital of Transbaykal, and another day and a half passes before one arrives in Vladivostok. More than 8,000 kilometers by air lie between the western and eastern borders of the Soviet Union. Chita is 6,236 kilometers by railroad from Moscow; Vladivostok is 9,333 kilometers from Moscow via Khabarovsk, and still 8,312 kilometers via the north Manchurian line by direct route.

But even within the Soviet Far East, a distance which seems extraordinary to the European has to be covered to travel from one end to the other. There are around 2,500 kilometers between the southwestern tip of Lake Baykal and the mouth of the Amur, and the airline from Pos'yet Bay, southwest of Vladivostok, to Cape Dezhnev on the Bering Strait is almost 5,000 kilometers long. Sakhalin Island

131 from north to south is almost 1,000 kilometers long, and Kamchatka Peninsula stretches around 1,600 kilometers into the sea from the mainland. These few facts may be enough to give some notion of the vast distances and also the size of the land. The land covers 3,850,000 square kilometers. That is more than fifteen times the size of Great Britain and Northern Ireland or seventeen times the area of France. But this vast area[3] is in European terms practically empty of 161 people; for in one square kilometer taken as the general mean, there 311 are only 1.6 persons--even if estimated population of 6.3 million in 1950 is taken as a basis. That is extraordinarily sparsely settled. However, in order not to give any false notions, it must at the same time be noted that the actual distribution of people is entirely different. In the southern parts there are regions which are much more thickly settled, while in the vast areas away from the transportation lines, especially throughout the north, in areas of many square kilometers only one person is to be found.

The southern regions--Transbaykal, Amur Oblast, Maritime Krai, the greater part of Kamchatka, and also Sakhalin--are completely suitable for accepting people, even though the harsh climate brings certain hardships. But the Russians are more accustomed to bearing such conditions and better suited for overcoming them than any other European people. Thus Transbaykal and the real Far Eastern regions of the Soviet Union offer settlement opportunities with good prospects for the excess population in other /16/ sections. The population has continuously and considerably increased through immigration:

1911	1,723,754
1926	2,304,000
1939	4,039,000
1950	6,300,000

631 The administrative division corresponds approximately with
161 the natural provinces named in the concept "Soviet Far East" although the borders do not coincide exactly. However, in order to be able to use figures and statistics, it is necessary for practical reasons to make the administrative regions equivalent to the provinces. Unfortunately exact data for this purpose are available only for the time of the last census on January 17, 1929. These data give the following figures for the Soviet Far East: /Table on Following page/

[3] [i.e. The Soviet Far East — Analyst]

133 "golets"), which means the same as "baldy" or "bald-head." These goltsy, which appear in Transbaykal only in individual instances, are extremely typical for all mountain areas in the Far Eastern region.

101 Culturally, too, Transbaykal has to a remarkable degree a
•311 transitional character. The steppe regions, the steppe valleys, and the steppe islands have since time immemorial been the seat of nomadic cattle-breeders, in this case the Buryat, an intelligent and energetic tribe of Mongols, who have kept themselves on the steppes which suit their nature and culture. It is interesting to determine how exactly their expansion even today coincides with their natural landscape. The Buryat penetrate only rarely into the forest areas; more often they leave these to the forest peoples of the Tungus, who even today live there still as hunters and reindeer breeders. The Buryat were the first people to give successful resistance for a time to the invading Cossacks, but as nomads they later had to clear the field for the Russians who were seeping in slowly and pursuing agriculture. Buryat helped themselves, however, by adjusting: they often went over to agriculture themselves, and they appropriated for themselves the advantages of Russian culture. Thus, even though they were penetrated by Russians, they were able to retain their original regions and to attain a cultural level which raised them above all their Mongolian tribal brothers on the other side of the Soviet Russian border. Because of the invasion by the Russians, there came into existence here a cultivated landscape which was inserted between the completely forested areas in the north and the pure steppes in the south; but corresponding to the spacious transition region, this cultivated landscape did not appear in a closed-off zone, but in culture islands. In extensive regions in the south near the border, the Buryat even today still lead their old nomadic, cattle-breeding life.

132 The fact that the bulk of the rainfall occurs in the summer is favorable for agriculture. Chita, lying in the middle of the land, has an annual rainfall of only 319 millimeters. However, 289 millimeters of this falls during the vegetation period so that a relatively sufficient
[243] amount of dampness is available, in conjunction with continental warmth, to make possible a very high yield of summer wheat. This makes Transbaykal an important wheat producer and the principal supplier for all of east Siberia.

133 The Amur country is adjacent to Transbaykal, without a clear border, north of the northern arc of the Amur. In its large morphological traits it is no less varied than Transbaykal, though the differences in

311 The excess of dampness in vegetation season is a handicap even for agriculture and makes difficult the extension of the cultivated areas. New land for cultivation must as a rule be won laboriously from nature by drying it out. More and more the extended Zeya-Bureya Plain and the area along the Amur have become quite thickly settled, and large parts of the famous "Amur [162] Prairie" have been transformed into cultivated land. It is predominantly Russians who live here. The Chinese who immigrated here earlier have been pushed back over the Amur--in part by force. In all the rest of the area, however, /30/ untamed nature dominates the landscape, which is traversed at most by a few Tungus or Russian 316 hunters. A wealth of gold has lured numerous Russians into this wasteland, too, especially in the area around the upper courses of the left tributaries of the Amur. A locally very active gold industry has come into existence, which today is organized by the state and which has drawn even this distant region into the economy.

133 The Ussuri country is divided into two completely different parts: the huge mountain mass of the Sikhote-Alin', which fills the entire area from the Bay of Peter the Great in the south to the mouth of the Amur in the north; and the Ussuri-Khanka lowlands, which extend west of the Sikhote-Alin' in the same direction and continue south of the Khanka Lake without marked interruption as far as the Bay of Peter the Great.

The Sikhote-Alin' is a forest-covered, strongly valleyed /zertaltes/ mountain mass, which is divided into several ridges running parallel to the coast. The shapes of the mountains are soft without especially marked edges and projections. More often plateau-like shapes predominate here, too. The heights in general lie between 650 and 850 meters; the valleys, however, are deeply carved out. Rising slowly from the west, the mountain mass descends steeply to the sea and only rarely leaves free a narrow coastal indentation plain on which there arises small, poverty-stricken fishing villages. The nearness of the sea crossed by a cold stream causes a cool, foggy, rainy, unfriendly summer, thus producing similar conditions to those found on the entire coast extending to the north beyond Okhotsk. Swampy valleys and forests dripping with a cool dampness and with a more northern stamp are typical marks of this area.

132 The western side of the Sikhote-Alin' and the Ussuri-
137 Khanka lowlands, on the other hand, correspond more to the Amur country. Warm to hot summers joined with high rainfall and a

strong inclination to marshiness are distinguishing marks for this area. 132
The Sikhote-Alin' stretching parallel to the coast keeps back the 137
coolness and also the fog from the sea and allows the sun to have a stronger effect. Everywhere the more southerly position makes itself apparent. In the forests of Sikhote-Alin' deciduous trees appear more and more in the foreground, increasing toward the south, until finally, in magnificent specimens, they form the sole type of tree.
In the cultivated zone, too, which stretches along the entire lowlands, 311 ●
typically Manchurian-Chinese plants become noticeable in increasing [241]
measure toward the south. Kaoliang and other millet, soya beans, and rice appear noticeably on the scene. There is a change in the 162
population, too. In the northern part of the lowlands, as far as Khanka Lake, Russians and Ukranians predominate; in the extreme south, Chinese and Koreans are in the majority. The Ussuri-Khanka lowland is relatively thickly settled, the Sikhote-Alin' itself, on the [316]
contrary, is in large areas as good as uninhabited, except for some mining areas in the south, where /31/ coal primarily is mined. Native Tungus traverse the Sikhote-Alin' in smaller numbers than in the old days, and in addition there are Russian hunters and Chinese collectors, who are looking for secret, legendary plants.

Sakhalin Island stretches over 950 kilometers in a meridional 131
direction. The southern part is traversed by two parallel mountain ridges, which are separated from one another by a relatively wide depression. The eastern mountain chain is shorter but higher, and its peak of 2,013 meters is the highest elevation on the island. Toward the north the mountain ridges flatten out and give way to a hilly plain. The cool, foggy air masses blow unhampered over the land here, while in the south a difference in climate is caused by the mountain chains. The eastern slopes are cool, rainy and unfriendly, while the western side appears somewhat milder. The southern parts of the island, which were Japanese from 1905 to 1945 and only now have again become Russian , are generally more favorable. In terms of its landscape, Sakhalin can be designated a damp, cool, forested mountain country, but in numerous places treeless moss steppes appear, which recall the tundras of the north. Once feared as a Russian prisoners' colony, Sakhalin is advancing economically more and more because of its petroleum and coal resources.

The Okhotsk coastal area begins at the Uda Bay and encom- 133
passes, in a narrow coastal strip, the Sea of Okhotsk as far as Penzhina Bay in the extreme northeast. In the western part, which stretches

chains traverse it from west to east, and these mountain chains with their spurs in part reach the coast, where they break off sharply. But this area also does not lack plains, for plains extend from the coast into the land on both sides of the rivers. 133

All these areas[1] are either very little settled or are completely uninhabited. Of the Russian coastal settlements only Okhotsk and Magadan as harbors have a certain importance. Worthy of note is the reindeer breeding of the Chukchee on the peninsula named after them. 311.

South of the Anadyr' lowland rises the Koryak Range, which fills the entire area as far as Korff Bay. Some mountain ridges, only a little separated from one another, traverse the land in a wide arc from the southern end of the Anadyr' Bay in the direction of the Kamchatka Mountains. Only near the coast have the rivers dug out deep valleys; here forest growth appears, while the high areas and the ridges are covered by pure tundra. 133 [137]

The coast of the Bering Sea has numerous native and Russian fishing settlements; the hinterland, on the other hand, is occupied only by small Paleoasiatic remnant peoples, who pursue reindeer breeding. [361]

Kamchatka Peninsula is one of the most interesting regions in the Soviet Russian Far East. The relief, which just like Sakhalin gets its main characteristics from two mountain ridges, is extraordinarily varied, for numerous young volcanos are set on the mountain ridges, and a number of these volcanos are still active. The Klyuchevskaya Sopka, the highest volcano on the peninsula, rises from the valley of the Kamchatka River to a height of 4,775 meters and makes an imposing picture with its ice-capped peak. Because of the abundant rainfall and the mild climate, the plant covering of the peninsula is very luxurious. On the outer mountain slopes deciduous forests predominate, only /33/ in the interior of the peninsula do firpine forests appear. The only exception on a larger scale is the west coast, on which tundra-like moss steppes have developed. In addition to numerous Russians who occupy primarily the coastal fishing villages, the Paleoasiatic Koryak and Kamchadal have remained in the interior. 137 162 361

The volcano belt of Kamchatka continues toward the south in the island chain of the Kurils, which after World War II went to the Soviet Union along with the southern half of Sakhalin Island. 133

1 [i.e. the Okhotsk coastal area and the Anadyr' area -- Analyst]

characteristics and its structure, but in lower, damp places it clearly shows its semi-marshy origin. 134

In general, however, podsol soil predominates here; it is but a little inferior in quality to the same soils of North Germany and Central Russia, and it is well suited for agriculture. According to general /127/ estimates, the area capable of cultivation is 200,000 square kilometers in Transbaykal, 110,000 square kilometers in the Amur county, and 150,000 square kilometers in the Ussuri region--thus a total of 460,000 square kilometers. In contrast to these opportunities, the area exploited thus far for agriculture was only 1,877,900 hectares (1938) and thus only a small proportion of the total area available. However, the area under cultivation has increased 60 percent since 1913, when it was 1,171,500 hectares; and this is a mighty accomplishment for this land so distant from central Russia. 316

The growth of the area under cultivation occurred differently in the various regions as the following chart shows. The area under cultivation has more than doubled since 1913 in the Buryat Mongol ASSR and in the Chita Oblast, and this increase has been continuous in the years of the Soviet regime. The natural conditions here are similar to those of the southern Russian steppe, and require no special adaptation on the part of the Russian peasants. Conditions are different in Khabarovsk Krai and in the Maritime Krai, as has already been shown. The cultivation of new areas here is behind that in Transbaykal and shows greater variations from year to year. The decline in Khabarovsk Krai from 740,300 hectares in 1928 to 580,800 hectares goes back to the beginning of the Five Year Plans which eliminated less productive land by means of planned management. It is remarkable, however, --as official Soviet statistics indicate--that there has been a regular year by year decrease in the area under cultivation in the Maritime Krai from 1932 to 1938. (The figures from 1932 to 1938 in 1,000 hectares are: 461.8--449.6--431.6--419.9--371.0--322.0--322.0--318.3.)

The above as well as the following figures are taken from the Soviet publication, "Posevnye ploshchadi SSSR" (11).

11. "Posevnye ploshchadi SSSR" /Areas under Cultivation in the USSR/. The Dynamics of 1928, 1932-38 in Comparison with 1913. Statistical Reference Work. Issued by the State Planning Commission, Moscow-Leningrad, 1939.

●311 The Development of the Area under Cultivation
in 1000 hectares

	Buryat-Mongol ASSR	Chita Oblast	Khabarovsk Oblast	Maritime Krai	Total
1913	191.6	287.2	471.4	201.3	1,171.5
1928	203.7	407.7	740.3	413.0	1,764.7
1938	386.7	592.1	580.8	318.3	1,877.9

2H Among the plants cultivated, grain by far stands in first place in all four regions. In the Buryat-Mongol ASSR 90 percent and in Chita Oblast even 92 percent of all the area under cultivation (1938) was devoted to grain; and accordingly the two regions can be regarded as pronounced grain areas. In Khabarovsk Oblast the proportion devoted to grain is 75 percent and in the Maritime Krai it is 69 percent. As is appropriate to the climatic conditions, the cultivation of summer grain predominates. Winter seeding in all four regions together takes up only 27,500 hectares, which is 1.5 percent of the area under cultivation.

/128/ The Cultivation of Grain in 1938 in 1,000 Hectares

	Total Area Devoted to Grain	Winter Grain	Summer Grains		
			Wheat	Oats	Barley
Buryat-Mongol ASSR	348.8	10.8	133.2	84.9	14.7
Chita Oblast	543.0	6.4	275.4	167.1	31.8
Khabarovsk Oblast	446.0	0.8	242.4	177.6	2.5
Maritime Krai	276.0	9.5	88.3	82.6	6.0

The cultivation of little paying summer rye predominated in the Buryat-Mongol ASSR before 1914, but since then this has been displaced more and more by wheat. By 1938 wheat was at the top of the list of plants cultivated, having 40 percent of the cultivated land devoted to it, and only 27 percent of the agricultural land was devoted to summer rye. The cultivation of potatoes, vegetables, and feed for livestock was entirely lacking earlier, but at present it is being strongly pushed, and by 1938 it had already reached 6.2 percent. In the Chita Oblast the cultivation of wheat has increased considerably and has tripled since 1913. Having 46 percent of the land under cultivation, it comprises exactly half the land devoted to grain. By 1938 only 6.9 percent of the land was devoted to summer rye, which once

241 is still not sufficient to cover the deficit of the two other regions.

Area Under Cultivation Per Person as of 1938

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	Total Area Under Cultivation in 1000 hectares	Area Under Cultivation Per Person in hectares	Total Area Devoted to Grain in 1000 hectares	Area Devoted to Grain Per Person in hectares
Soviet Union	136,943.1	0.80	102,411.0	0.60
Buryat-Mongol ASSR	386.7	0.71	348.0	0.65
Chita Oblast	592.1	0.51	543.0	0.47
Khabarovsk Oblast	580.8	0.41	446.0	0.31
Maritime Krai	318.3	0.35	216.0	0.24
Transbaykal and the Far Eastern Region	1,887.9	0.47	1,553.8	0.39

241 No statistics of equal worth are available for judging the development of agriculture from 1938 to the present, since no such statistics have been published since then. Instead a great number of bulletins from the Soviet press are on hand; but these contain only isolated data of a general type, or special reports from highly variable areas or even localities. It is difficult to form an overall picture from all these reports, but it is the only possibility of being able to get at least a glance at the development.

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[B12] Many reports speak of an immigration which benefits both the industrial and also the agricultural sector. Also the enlargement of the area under cultivation and the raising of production often form the subject of these reports, and in this the results of the last Five Year Plan, up to 1950, are especially emphasized. In the steppe regions of the Chita Oblast a beginning has been made in the introduction of artificial irrigation. As a beginning for this, numerous canals were dug in 1948 which irrigated 12,850 hectares. In the vicinity of the big cities the greatest attention /130/ has been devoted to the development of farming near the city and especially to garden farming. In the surroundings of Vladivostok the setting up of 1,560 hectares of garden area in 1948 was envisaged in the framework of a great plan. Also in the Khabarovsk area important wild areas are being converted into cultivated land so as to ensure the feeding of the growing city.

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Here in 1950 a Melioration Machine Station was erected, the first in the Krai, which is to be followed by seven others. Of great significance is the development of agriculture on the Kamchatka Peninsula. Before World War I, according to Soviet figures, the area under cultivation was 4 hectares; in 1938 it was 2,778 hectares. Since then it has further increased. In 1950 there were more than 10 kolkhoz. In 1952 a scientific expedition was sent out from Khabarovsk to Kamchatka to investigate and to prepare for the gaining of additional land for agriculture. In the same year two Melioration Machine Stations were erected, which in the next three years made nearly 40,000 hectares of swamp and taiga country available for agriculture. From Sakhalin, too, successes in the winning of new land were reported. Prominent is the fact that also the native population (Gilyak in the "Chir Unvd" Kolkhoz, i.e., "New Life Kolkhoz") has been used with success in agriculture. How quickly the agricultural occupation of southern Sakhalin has been carried out is indicated by two reports: in 1949 there were 33 kolkhoz there and 3 sovkhoz, and in 1950 there were already 69 collective farms.

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The progressive mechanization and technicalization of agriculture constitutes a second important part of the content of the more recent reports. The number of Machine Tractor Stations (MTS) has increased in all regions. In the Buryat Mongol ASSR their number increased from 25 in 1937 to 36 in 1948; in Khabarovsk Krai they almost doubled in number from 1938 to 1947, when they numbered 76. In 1948, 25 Grass Mowing Machine Divisions were installed in the Buryat Mongol ASSR; and from 50,000 hectares of meadowland these Divisions were supposed to supply winter hay for the great kolkhoz, since the manual work force was not sufficient. In the Buryat Mongol ASSR the first agrarian city in the Soviet Far East was also established in 1950, and for this 400 two-story dwellings and 30 one-family houses were constructed. Remarkable, too, are the reports that special mowing threshers were used in harvesting the soy beans and the rice.

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Among the plants whose cultivation has been especially fostered, soy beans and rice stand in first place. In 1949 there were 16,000 more tons of soy beans harvested than in 1948. With rice cultivation, on the other hand, progress seems to be made only slowly. In 1937 in the Far East 36,400 hectares were cultivated with rice, and, according to the last Five Year Plan, the area is to be increased to 37,000 hectares by 1950; this is very modest considering the fact that in 1913 there were 57,000 hectares of rice fields. Great attention is also devoted

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	1940	1941
Soviet Union	225.0	240.0
Kolyma Region	51.0	55.6
Percentage of the whole supplied by the Kolyma Region	22.7	23.2

The share of the Kolyma region has risen to almost 25 percent of the total extraction done in the Soviet Union. According to definite plans, gold production in the Kolyma area is to be raised to 75,000 kilograms. Friedensburg, in his book on "Gold" which appeared recently, has collected together in a table of figures (63) all estimates and

63. Friedensburg, F., "Gold," Die Metallischen Rohstoffe /Metallic Raw Material/, Vol. 3, 2nd edition (Stuttgart, 1953), p. 178.

reckonings on the total gold extraction in the Soviet Union. With justice he points out the confusion that rules on this question even in foreign agencies versed in such affairs. Nevertheless, I do not shy from bringing the above table which rests on my own sources. The present production may be assumed to be approximately 250,000 kilograms (1952). In any case, it is certain that the Kolyma region stands at the head of all gold fields in the Soviet Union. According to the supplies explored, mining is assured for 15 to 20 years if the extraction remains at 75,000 kilograms.

The Forests and the Use of Wood

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The forests of Transbaykal and of the Soviet Far Eastern regions are, by European standards, as large as countries. The forested area covers around 1,800,000 square kilometers. While the Far Eastern regions contribute around 17.5 percent of the total area of the USSR, these regions provide 21 percent of the total forested area.

The distribution and extent of the forests in the Soviet Far East are shown in the following table:

(Table on following page)

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Region	Forest Area in millions of hectares	Percent of the total area	Area stocked with forests in millions of hectares	Percent of the total area
Buryat-Mongol ASSR	28.7	84	18.7	57
Chita Oblast	57.6	80	43.2	60
Far Eastern Regions	104.2	37	58.9	21
	180.5		120.8	
USSR	956.3	44	484.2	23

/170/ Transbaykal can be designated as rich in forests although it includes extensive steppes. The forest area or the forest potential, as the Russians designate it, is given at 28.7 million hectares (1936) in the Buryat Mongol ASSR; thus the wooded area covers more than 84 percent of the total area of this republic. However, this total figure of 28.7 million hectares (100 percent) also includes the pastures and meadows closed in by forests (6 percent), and, in addition, the swamps, the bare peaks of the gol'tsy, and boulder areas little grown up (13 percent), and thus only 23.3 million hectares (81 percent) remain for forests themselves. Of this, again, only 18.7 million hectares (65 percent) are stocked with forest, i.e. real, tall forests. Burned areas, windfallen trees, and other things account for the significant difference between the two last figures. These figures show the actual conditions, indicating how one must view in their individual parts the areas designated as general forest potential in the statistical information. These figures also serve at the same time to explain the above table. The percentage of forest is largest in the northern areas, especially in the mountains which surround Lake Baykal, and it is smallest in the south, especially in the area around Kyakhta.

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According to types of trees, the stocked wooded areas are divided as follows:

Conifers: 93 %, with	larches	47 %
	pines	24 %
	cembra pines	16 %
	spruces, firs	6 %
Deciduous trees: 7 %, principally		
	birches, aspen, poplars, and others	7 %

311 137 Approximately 65 percent of the forests consist of wood ready for cutting, i.e. the trees are over 100 years old. These and the above figures should be regarded as only estimates; for a large part of the forested area has neither been investigated nor has a count of the supply in the forests been made. What large tasks are still to be resolved here and also in the other Far Eastern regions is shown by the figure given by V.F. Panayev for the year 1936: he said that at the time only 18.4 percent of the total forested area in the Buryat Mongol ASSR had been explored. (12)

12. Problemy Buriat-Mongolskoi ASSR /Problems of the Buryat-Mongol ASSR/, Works of the First Conference for Exploring the Productive Powers of the Buryat-Mongol ASSR, 2 vols., (Moscow-Leningrad, 1935-36), Vol. II.

313 The use of the wood is determined in terms of area by the development of transportation. The exploitation of the forests is limited to the area of the Selenga and its tributaries, which carry down the cut wood for the most part to Ulan-Ude or Il'inskoye for processing. The forests are also exploited in the regions near the shores of Lake Baykal, where wood processing industries have arisen at the mouths of the Barguzin and of the Upper Angara. The most important plant in this area is in Mysovsk /now: Babushkin/, where a great lumber works with sixteen saw sashes is situated /saw frame/. The railroads should also be mentioned as the last supplying line for exploiting /171/ the forests, while all the remote forests still remain in their natural state.

311 313 In Chita Oblast the forest conditions are similar, but here the percentage of actual forest is somewhat greater than in the Buryat-Mongol ASSR. The exploitation of the forests is limited to the regions near the railroad and to the areas neighboring on the Amur and its tributaries. The main processing centers are Chita, Khokhotuy, and Bada.

311 The percentage of forested areas in the other Far Eastern regions appears slight, being 37 percent for the forested areas and 21 percent for areas actually stocked with trees. This is explained by the fact that to these regions also belong the areas of the northeast, such as the Chukchi and Koryak peninsulas, the Okhotsk coastal area, and Kamchakta, which in part are completely without forests or have only slight forests. This is also explained by the great difference between the general forest potential (104.2 million hectares) and the area stocked with forest

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(58.9 million hectares). If we set the general forest potential at 100 percent, then, according to the Atlas of Sources of Energy in the USSR, there should be subtracted from this 1.1 percent for meadows and pastures (1.1 million hectares), 24.7 percent for swamps, bare rock, and boulder slopes which are only slightly grown over (25.8 million hectares), 17.7 percent for bush growth areas, burned areas, windfallen trees, and other (18.4 million hectares), and thus 56.5 percent (58.9 million hectares) remain for the areas stocked with forests.

The bulk of the forests are thus divided between the south, i.e., the Amur and Ussuri regions, and the Maritime Krai. This is of very great economic importance, because these forests are thereby closer to the reach of man. In these areas the percentage of forests to the total area is also much greater than the general average. Thus, for example, the percentage of forest land in Khabarovsk Oblast is 66 percent, in the Maritime Krai it is 51 percent, and in the Amur Oblast it is 37 percent. The Oblast of the Lower Amur (28 percent) and the Zeya area (25 percent) have the smallest percentage of forest area here. Sakhalin is among the areas richest in forests. In northern Sakhalin the percentage of forest area is 66 percent, and in southern Sakhalin which was formerly Japanese, it even reaches 85 percent (2.9 million hectares).

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The stocked forest areas (not including southern Sakhalin) are divided among the various types of trees as follows:

Conifers:	84 %, with	larches	36 %
		spruces	27 %
		cembra-pines	12 %
		pines	8 %
		firs	1 %
Deciduous trees:	16%, with	birches	9 %
		oaks	4 %
		lindens	2 %
		ashes, aspens	1 %

The deciduous trees in particular increase toward the south, and accordingly, in comparison with the general averages given in the above table, the percentage of valuable deciduous trees in the Ussuri region and in the southern part of the Maritime Krai is much larger.

The supply of wood in the Far Eastern forests is also larger in comparison with Transbaykal, for in the Far East 70 percent to 80 percent of the trees are ready to be cut down. The total wood supply in the

forests here is estimated to be 6.5 billion cubic meters, of which 5.4 billion cubic meters consist of coniferous wood.

The entire river network of the Amur, with its numerous tributaries which are navigable by ships and rafts, facilitates the exploitation of the forests, and accordingly a significant wood industry has been able to develop in the Amur and Ussuri regions. Khabarovsk and the surroundings are regarded as the base of this industry. From there the bulk of the wood-processing industry extends to the south, following the leading line of the Ussuri and always lying on the tributaries of the Ussuri. Here, from north to south, lie the wood centers of Khor, Dormidontovka, Bikin, Lesopil'nyoye, Lesozavodsk, and Vladimirovka. Another base for the wood industry is formed by Vladivostok and its environs with the towns of Okeanskaya, Shkotovo, Lukyanovka, and Tigrovka. Sovyetskaya Gavan' has very recently become the most important wood-processing center on the coast of the Sea of Japan. Komsomol'sk has received a large works for producing cellulose and paper. Aleksandrovsk on Sakhalin and Petropavlovsk on Kamchatka have in the last few years also been equipped with wood-processing plants.

The total amount of wood cut has increased significantly in comparison with the period before World War II. According to careful estimates, the amount of wood cut during the year of 1952 can be assumed to be 5 million cubic meters in the Buryat-Mongol ASSR, 6 million cubic meters in Chita Oblast, and 30 million cubic meters in the other Far Eastern regions. Considering all the circumstances, this estimate is more likely to be too low than too high.

The Soviet Union has acquired an important supplement to its wood economy by its acquisition of southern Sakhalin. The Japanese had built up an excellent wood industry, which before the war consisted of 68 saw mills and 11 large cellulose and paper factories. Karafuto exported annually to Japan more than 1.2 million cubic meters of wood and many times the value of this wood in cellulose and paper. What importance the wood-processing industry had for the economy as a whole is indicated by the industry's share, in terms of value, in the total production of Karafuto. The share of industry in Karafuto's production was approximately 60 percent, and of this 60 percent the cellulose and paper factories alone provided around 90 percent, and the entire wood-processing industry 92 percent. All this now stands at the disposal of the Soviet Union.

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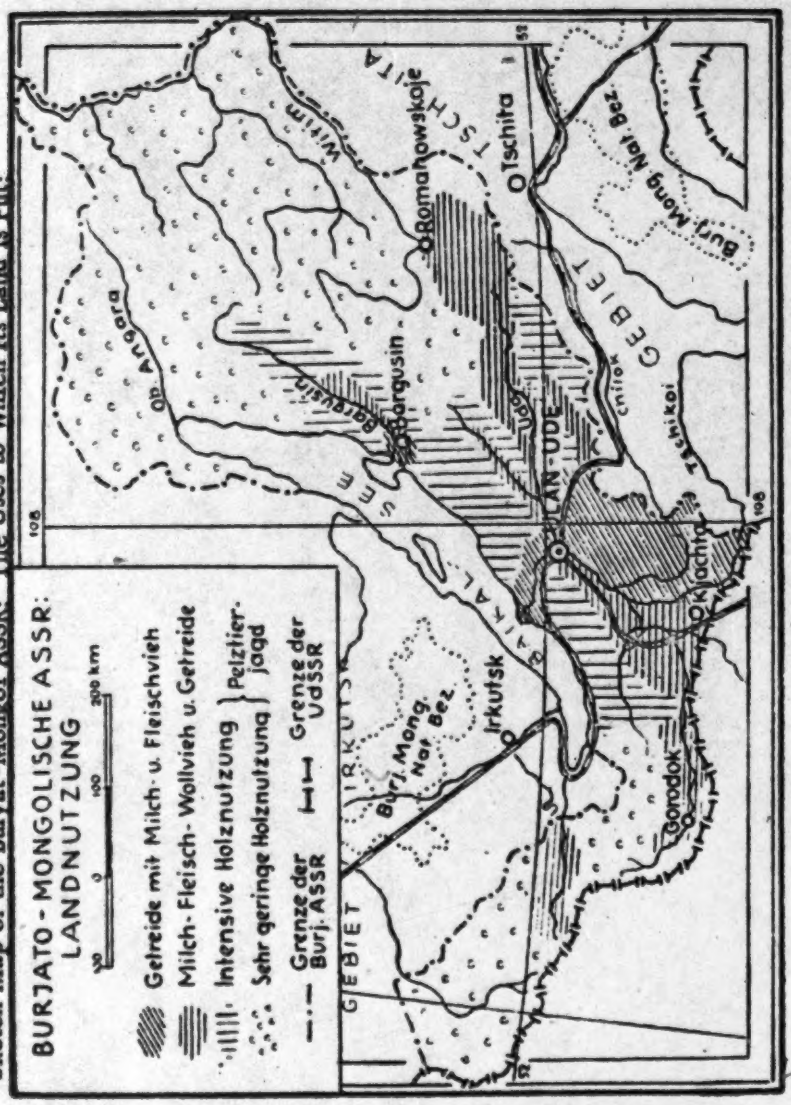
Sketch Map of the Buryat-Mongol ASSR: The Uses to Which Its Land is Put.



Grain with livestock used for milk and meat.
Livestock used for milk, meat, and wool; plus grain.
Intensive exploitation of wood.
Very slight exploitation of wood.
} Hunting of fur-bearing animals.
Border of the Buryat ASSR.
Border of the USSR.

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Sketch Map of Chita Oblast: Use to Which Land Is Put:

wheat with oats
various grains, predominantly rye
} with dairy and meat livestock

meat, dairy, and wool livestock with wheat

developed exploitation of the forests
slight or no exploitation of the forests
} with hunting of fur-bearing animals

1. Petrovsk-Zabaykal'skiy
2. Tarbagatay
3. Khokhotuy
4. Khilok
5. Mangut
6. Khapcheranga
7. Chernovskiye Kopi
8. Darasun
9. Baley
10. Gutay
11. Pokrovka
12. Kokuy

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off steeply at the Chara valley. The Udokan Mountain Range declines steeply on the north and on the south, in short, on both sides, while the Kalar Mountain Range has its steep decline in the north and declines slowly toward the south. 133

The Kodar Mountain Range, as seen from the Chara valley, represents a single closed mass, its high plain character being clearly recognizable. Through erosion this range has been broken into individual blocks. The Quarternary glaciation has contributed to widening and reforming the valleys. Most heavily cut up is the steep southern slope. The gol'tsy resting on the surface of the massif attain an absolute height of approximately 2,000 meters.

The Udokan Mountain Range in its picture shows a far greater unevenness than the Kodar Mountain Range. The former clod is broken up into irregular parts, which lie at various heights. Here, too, erosion has participated very strongly in the destruction of the original forms. Most strongly torn up is the decline toward the east to the valley of the Olekma. The highest places in the mountain ranges, especially in the area where the Udokan runs into the Kalar Mountain Range, received their present-day face through the Quarternary glaciation, whose traces are visible everywhere and give this part of the mountain range an Alpine appearance. But, in addition, there are also level high plains in the Udokan Mountain Range. In these high plains the original form of the post-Tertiary peneplain is visible.

Aside from the parts where it unites with /236/ the Ukokan Mountain Range, the Kalar Mountain Range generally has more high plains and flat gol'tsy, whose slopes are saturated with pieces of rock and boulders. The Kalar has preserved its plateau-like character better than the Udokan Mountain Range. Toward the south the Kalar slopes slowly to the middle and lower course of the Kalar valley.

The greatest part of the Olekma Highland is overgrown with thick taiga; only the high gol'tsy project beyond these forests and are covered with bent wood or tundra vegetation. The highest mountains are without any form of plant growth. The swampiness is generally very great. It occurs most heavily in the level high plains and the valley depressions. The valley of the Chara especially is very heavily covered with swamps, just as generally the valleys opening toward the north suffer more from much too much dampness than the valleys opening toward the south. However, already here lonely Russian settlements are found, in which agriculture is pursued. Tungus reindeer breeders are known in the valleys of the Kalakan and Kalar. [137] [311]

The Zeya-Bureya Plain

This area is the section of the Amur country which is the richest in population and which is the best opened up economically. The easily accessible plain, the milder climate, the fertile soil have from early times /242/ caused a relatively heavy population to settle here, and pursue agriculture. This plain is the granary of the Amur region; 80 percent of the total area under cultivation in the region lies here. [311]

The region falls into two sections: the Amur-Zeya plateau in the west and the great Zeya-Bureya lowland, which extends east of the lower course of the Zeya along the Amur as far as the Bureya Mountain Range.

The Amur-Zeya plateau takes up the western part. This plateau stretches between the Zeya, its tributary the Urkan, and the Amur. The plateau declines slowly from the northwest to the southeast; the interior sections are gently rolling open country; on the other hand, the rivers toward the outside have dug deep gorges. The plateau breaks off sharply toward the lower Zeya and toward the Amur. On the right bank of the lower Zeya the decline becomes 180 to 240 meters deep and, with its heavy gorge formations, gives the impression of a mountain when viewed from the eastern "meadow shore." On the Amur the plateau lies 100 to 120 meters above the river at most, but only very rarely does the plateau come near the river. Here between Chernyayevo and Blagoveshchensk, the Amur valley has four terraces. The lowest one is exposed only when the water is low. Adjoining it with a step up of 4 to 6 meters, and, in places even 8 meters, is the meadow terrace with sandy, gravelly, and muddy deposits. This terrace is considerably wider and is regularly flooded when the water is high. The next middle terrace lies 10 to 20 meters above the normal water level and also breaks off precipitously toward the second terrace mentioned above. Forming a steep bank, this terrace also goes right to the path of the water in many places. There are already settlements in many places on it. The fourth or upper terrace attains a height of 50 to 60 meters and is less clearly set off. The northwestern part of the plateau still has a thick forest covering, but here the percentage of deciduous trees is very considerable. Toward the southeast the thickness of the forests decreases, and they gradually give way to a type of forest steppe. Characteristic of this section are little birch forests and extensive swamps and swamp meadows. Accordingly, livestock breeding predominates among the Russians settled here. [137]

Sketch Map of the Amur Oblast: Land Exploitation:

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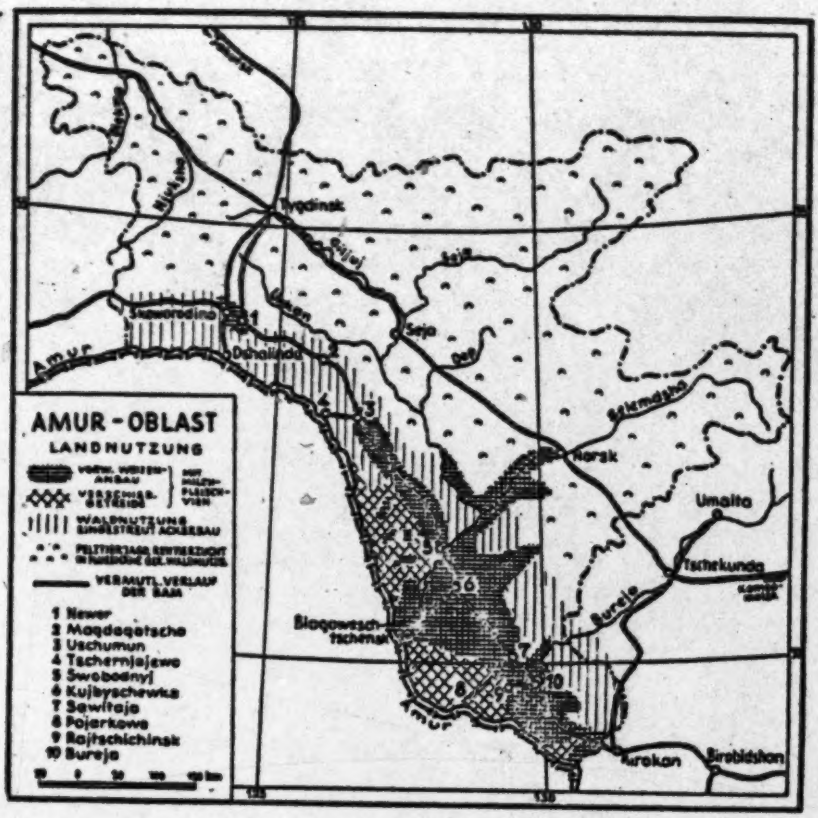

Predominantly cultivation of wheat, Various grains } with dairy and meat livestock

Exploitation of the forests intermixed with scattered agriculture

Hunting of fur-bearing animals, breeding of reindeer, slight exploitation of the forests near the rivers

Presumed course of the BAM

1. Never
2. Magdagachi
3. Ushumun
4. Chernyayevo
5. Svobodnyy
6. Kuybyshevka
7. Zavitaya
8. Poyarkovo
9. Raychikhinsk
10. Bureya

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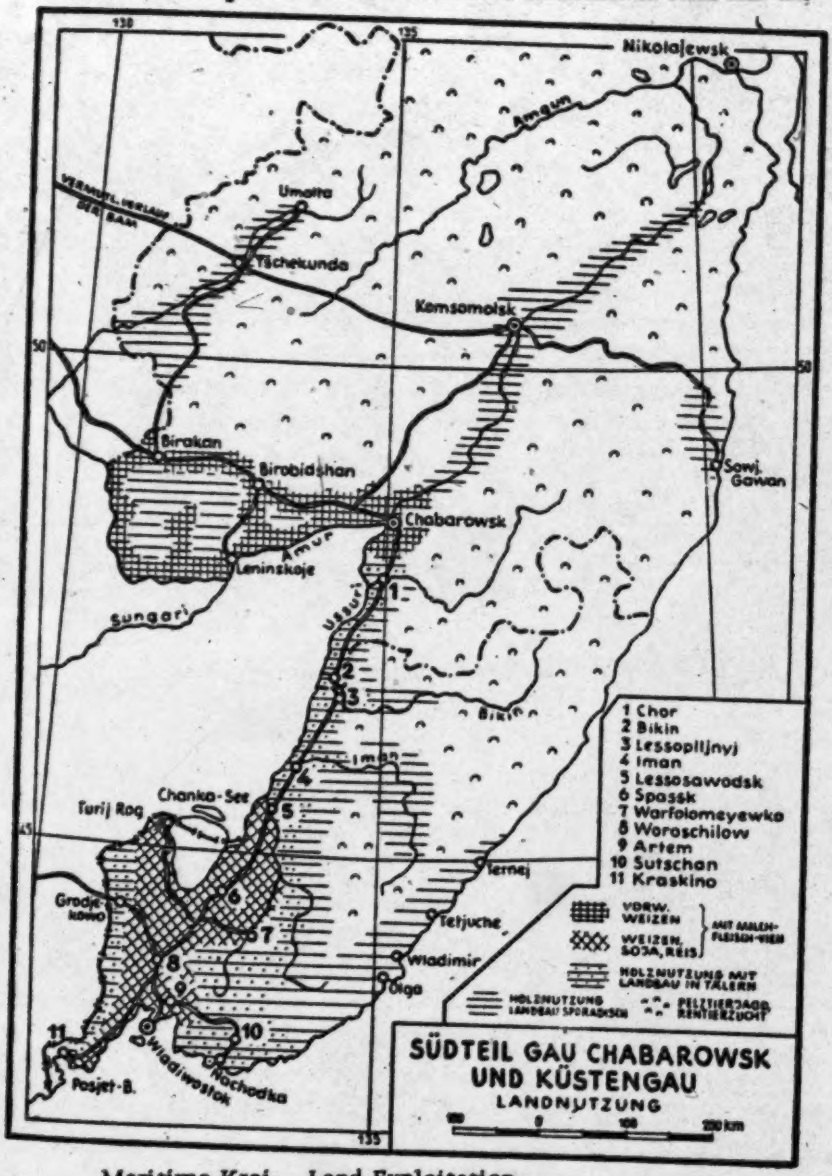
Sketch Map of the Southern Part of Khabarovsk Krai and the

634
311.



Maritime Krai: Land Exploitation:

(Captions to map on following page)

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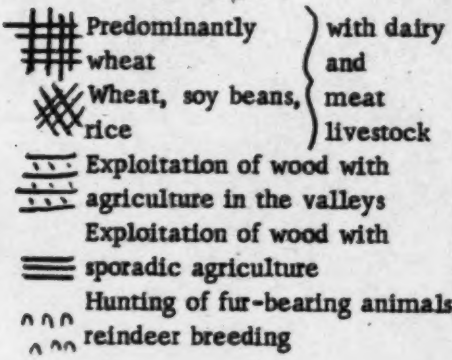
311.

(Captions to Map on page 282)

1. Khor
2. Bikin
3. Lesopil'noye
4. Iman
5. Lesozavodsk
6. Spassk
7. Varfolomeyevka
8. Voroshilov
9. Artem
10. Suchan
11. Kraskino


Predominantly wheat
Wheat, soy beans, rice
with dairy and meat livestock
Exploitation of wood with agriculture in the valleys
Exploitation of wood with sporadic agriculture
Hunting of fur-bearing animals, reindeer breeding

black earth regions in southern Russia have a damp spring and a dry summer. Here it is the reverse: the spring is dry; the summer, on the other hand, is very damp. 134

On the lower Bureya red earth is diffused under lightly podsolized soil. This red earth is the product of the weathering of gray Tertiary slate, and it owes its brick red color to enrichment by iron oxide. This red earth indicates that the climate of the Tertiary period must have been much warmer than it is at present. Also on the lower Amur the same Tertiary red earth has been determined. "Grapes, cork trees, and tigers are vestiges of that time when the red earth was forming, while pines, firs, and reindeers harmonize very well with the present-day formation of soil of the podsol and swamp type," says Glinka (70).

70. Glinka, K. D. O drevnikh protsessakh vyvetrivanniia v Priamurie /On the Old Weathering Processes in the Amur Region/. Pochvovedniie, 1911.

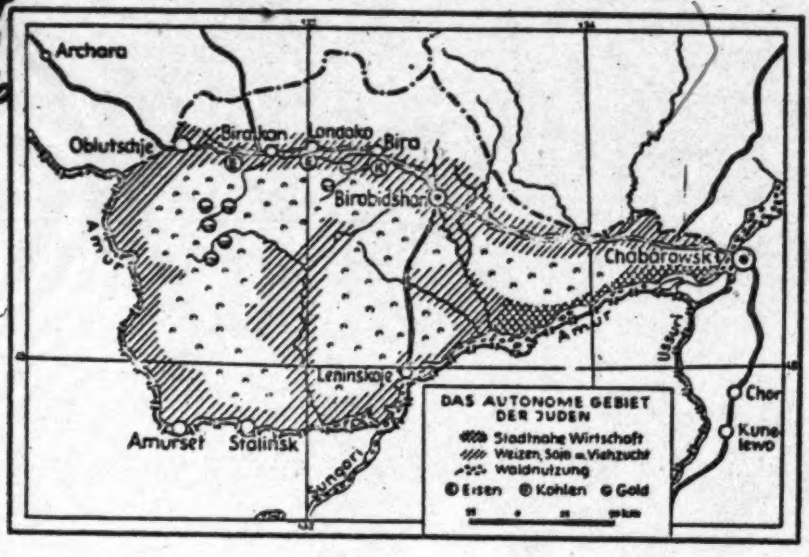
Region/. Pochvovedniie, 1911.

133 The northern part of the Zeya-Bureya plain lies generally below 500 meters above sea level and declines toward the lower Zeya and the Amur, /247/ /Sketch Map:/ /248/ where the greatest part lies at less than 200 meters above sea level. At Blagoveshchensk the Amur has a height of 120 meters. In individual places the substratum comes out from the flatly deposited Tertiary layers in the form of individual rocks, which consist of granite, Jurassic conglomerates and Jurassic sandstone, or also of porphyry.

The great dampness of the Zeya-Bureya plain, which arises from the excessive summer rainfall, leads in the unlevel regions to hanging landslips and solifluction phenomena of manifold types, which cause great difficulties in the construction of roads and installation of railroads, especially when--as, for example, in the country of mountain spurs--permafrost appears. The peasant fights constantly against threatening swampiness by draining his land. Despite these [311] difficulties, the area under cultivation is increasing continually. The swamps, which as a rule are covered with clusters of grass, are turned into hay fields by fires set off every year, and these hay fields in turn are then turned into cultivated land.

361 Settlement is very thick, and in the valley area of the Zeya, Selemdzha, and Bureya it penetrates farther and farther into the interior. In the plains one can often see from one village to the next one. The settlements differ in no respect from those in the Russian homeland. And when in mid-summer sunflower fields glow between the yellow gold of wheat fields, one might feel himself transported [244] to southern Russia. The cultivation of soy beans and perilla, which here lays claim to a significant percentage of the area under cultivation, [496] appears foreign, however. The railroad crosses the Zeya at Svobodnyy (10,000 inhabitants), where an active wood industry has developed. A branch railroad, which is 108 kilometers long, leads from Kuybyshevka with its more than 10,000 inhabitants to Blagoveshchensk (58,700 inhabitants), the capital of the region. The city extends along the shore of the Amur for a distance of almost 8 kilometers, toward the mouth of the Zeya. The Zeya here is 2 kilometers wide and exceeds even the Amur into which it flows. The city is the center of the entire agricultural area and has numerous flour and oil mills. In addition, the processing of lumber also plays a large role. The lumber is floated here on the Zeya and the Amur. Opposite Blagoveshchensk,

Sketch Map of the Jewish Autonomous Oblast:



Economy in the Vicinity of a City
Wheat, soy beans, with livestock
Exploitation of the forests
(E) Iron
(K) Coal
Gold

133 meadows on the river, otherwise they are covered with spotty clumps of grass. Where this grass is destroyed, the loose sand shows through, and the wind blows this together into dunes. The shores of the rivers are flat and predominantly covered with meadow, over which the high water extends. The old shore embankments are of greatest importance for human settlement; the broader ridges are as a rule plowed up and used for vegetable gardens, while the areas which become flooded serve as meadows or are used as hay fields. Now and again the entire plain is narrowed down by approaching mountains, or the plain widens to a great breadth with the neighboring depressions adjoining it. In such an area, in wide, swampy surroundings, lies the very flat Lake Bolon' which is 1,200 square kilometers and which is connected to the Amur by a broad water stream. The water level of the lake follows that of the Amur, and when the water is high even a backward flow is to be observed. At Komsomol'sk the hilly mountains come right down to the river on both sides and force the river into one continuous bed. Here ends the contiguous line of the real Amur plain with its magnificently flat relief, /257/ and an irregularly formed landscape begins. Nemerous rows of hills and chains of mountains with heights of up to 500 meters, indeed, even up to 900 meters, make the general picture more lively. The Amur again and again gains in area and widens often like a lake with numerous islands in the broad valley areas and forms in its neighborhood standing water in the form of long lakes in individual basins and old river beds. Despite this, the overall character of the far more broken up Amur plain is determined by the tributaries, which flow into the Amur from both sides in long, often curved, wide valley areas and which increase still more the degree of dividing up of the country. First to be mentioned in this connection is the valley of the Gorin, which extends into a broad depression in the hinterland and which conceals there the big Lake Evoron. Further down are the plains of the Limuri and Pilda; the area around the upper course of these rivers is known for its gold sands. Finally there is the extended valley of the Amgun which is more than 800 kilometers long. The general landscape picture changes its face but little toward the north. Meadow steppes, overgrown with high grasses, are also still typical here, even though the ground becomes ever damper toward the north and the swampiness increases. The same applies also to the appearance of broad-leaved deciduous trees within the forested areas; these forests represent characteristic mixed forests on the lower hills and mountains. In the direction of the

[311] [135] 133 137

the river. However, in contrast to the western side, the eastern side is narrow, and only somewhat wider at the mouths of the tributaries. On the other hand, the depression is also completely lacking in places, i.e., where the spurs of the Sikhote-Alin' go right down to the river. However, not only do these spurs interrupt the depressions, but they also often interrupt the hills and ridges which emerge from the flat alluvial plain and which are drier and as a rule have cultivated fields, villages, and forests. Therefore, there are only a few settlements along the river in the areas threatened by water. The real cultivated zone, which begins in the north already at Khabarovsk, always extends, for this reason, at some distance from the river bank along the country lying higher. The Ussuri Railroad also follows the higher land. Here the forest landscape and the forest steppe landscape have been cleared over an area 100 kilometers wide and have had to make way for the cultivated land, which extends in a considerable width especially in the regions around the lower courses of the Khor, Bikin, and Iman. The most important localities in these three depressions are Kondratyevka on the Khor, Bikin, and Iman, all three of which lie at the point where the above-mentioned rivers are crossed by the railroad. In the south the Ussuri depression flows together with the agriculturally important Khanka depression.

Khanka Lake lies 69 meters high and is 23,000 square kilometers in area, with its greatest length being 80 kilometers and its width being 40 to 85 kilometers. A narrow, sandy tongue of land in the north separates it from the so-called Little Khanka Lake. /267/ /Sketch Map//268/ South of this tongue of land the border crosses the lake, giving approximately a fourth of the lake to Manchuria. In the east the Sungacha forms the border. Khanka Lake is generally extremely flat, its greatest depth being 10 meters. It is surrounded by vast swamps and moors covered with reeds, and it is very much in the process of being filled up with sand. The western shores are formed from Tertiary loam and are, therefore, hilly and irregularly formed with numerous bays and peninsulas. Here to the west of the lake lie the regions, which, of all the areas near the lake, are most favorable for agriculture. The flat moors and swamps which otherwise surround the lake extend to the north for 10 kilometers, and toward the east and south they even extend 30 kilometers from the lake, thus indicating the one-time size and position of the lake. Where the swamps surrounding the lake are becoming somewhat drier, they are turning into meadows with high grass, thus giving a similar appearance to that of the Amur prairies of the Zeya and Bureya.

cultivated plants also flourish with great success. Very recently new sowing and cultivation machines have been employed by the Soviet in the entire Far Eastern region, which is damp in the summer. These machines take account of all the conditions of that area. In the expansion of the cultivated areas devoted to soy beans, rice, beans, millet, etc., it has been shown that there has been more conversion to these in more recent times, following natural conditions. The noxious fungus, which prefers to attack the European types of grain, such as wheat, barley, and oats, has already been pointed out. This grain disease occurs in those damp warm regions in especially rainy years. As Arved Schultz (181) has observed, it is very characteristic

181. Schultz, A. Das Ussuri-Land /The Ussuri Country/. Königsberg, Prussia, 1932.

that the fields of the Korean and Chinese peasants are attacked less than the fields of the Russians. There must, therefore, also be some reasons for this. In addition the fight against the Fusorien, of which a total of 22 types have been determined to date, has been taken up by the Soviet.

In contrast to the little populated eastern and southern sides of Khanka Lake, the Tertiary hilly country to the west of the lake is thickly populated and is among the best agricultural regions. A railroad line, which is 127 kilometers long, leads from the Ussuri Railroad into this region and ends right on the border in Turiy Rog at the northeastern end of the lake. On the eastern side of Khanka Lake, the cultivated zone, which continues from the north without interruption, follows the Ussuri Railroad in a broad line, and with broad spurs into the valley of the Daubikhe and Ulakhe, the cultivated zone also penetrates toward the east into the mountain range. South of the lake the cultivated zone takes up the entire area from the Manchurian border to the mountain spurs of the Sikhote-Alin' and extends in an area of almost equal width via the Suyfun depression toward the south to the coast, where on the west side of the Bay of Peter the Great it extends farthest to the south in the coastal plain.

The watershed between the Ussuri and the Suyfun is flat and scarcely makes an appearance morphologically. The Suyfun itself comes from Manchuria and crosses the border almost exactly at 44° latitude. Then it turns immediately toward the south to the sea. The valley area of the river is level and is accompanied on both sides